

Eukaryotic Cells

Even though most cells are small, cells are still complex. A eukaryotic cell has many parts that help the cell stay alive.

- What You Will Learn**
- Identify the different parts of a eukaryotic cell.
 - Explain the function of each part of a eukaryotic cell.

Vocabulary

cell wall	mitochondrion
ribosome	Golgi complex
endoplasmic reticulum	vesicle
lysosome	

READING STRATEGY

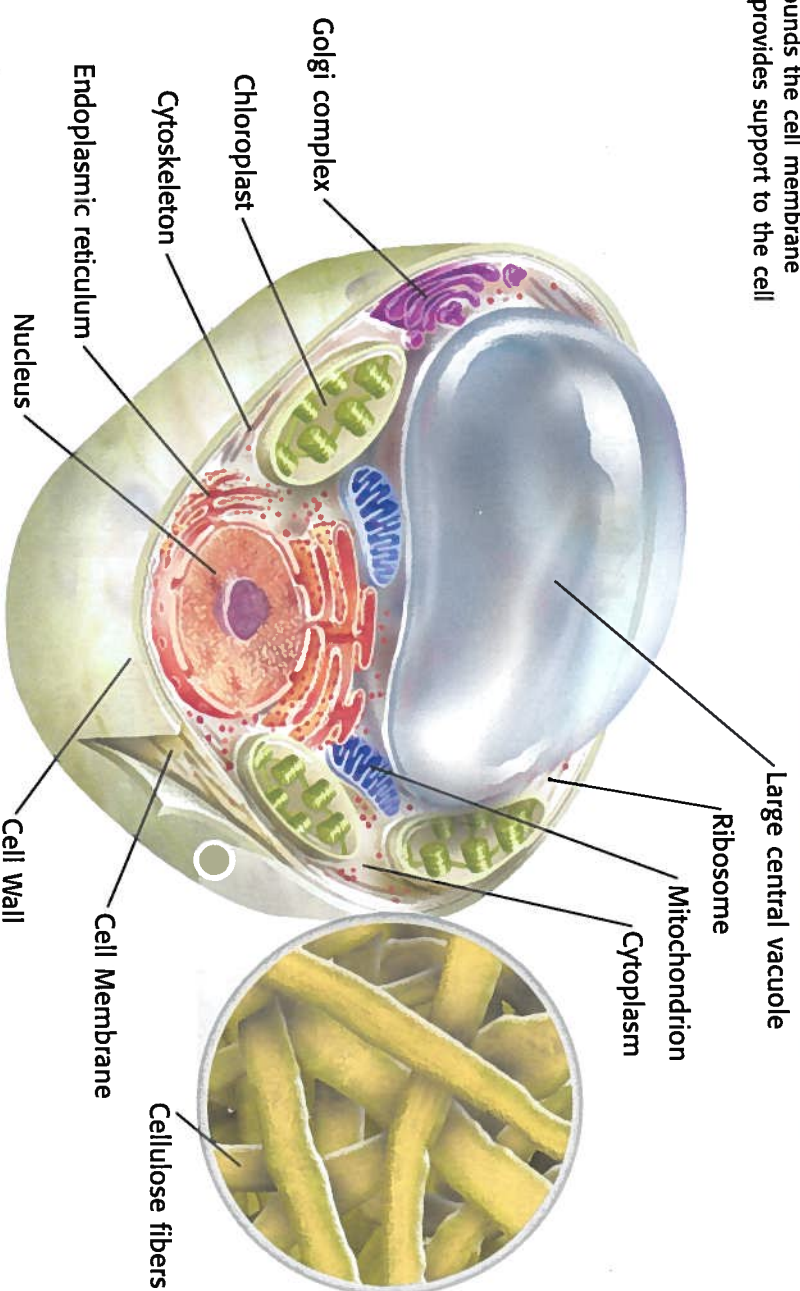
Reading Organizer As you read this section, make a table comparing plant cells and animal cells.

Cell Wall

Plant cells have an outermost structure called a **cell wall**. A cell wall is a rigid structure that gives support to a cell. Plants and algae have cell walls made of a complex sugar called *cellulose*. **Figure 1** shows the cellulose fibers in a plant cell wall.

Fungi, including yeasts and mushrooms, also have cell walls. Fungi have cell walls made of a complex sugar called *chitin* (KIE tin) or of a chemical similar to chitin. Prokaryotic cells such as bacteria and archaea also have cell walls, but those cell walls are different from those of plants or fungi.

Figure 1 Plant Cell



Cell Membrane

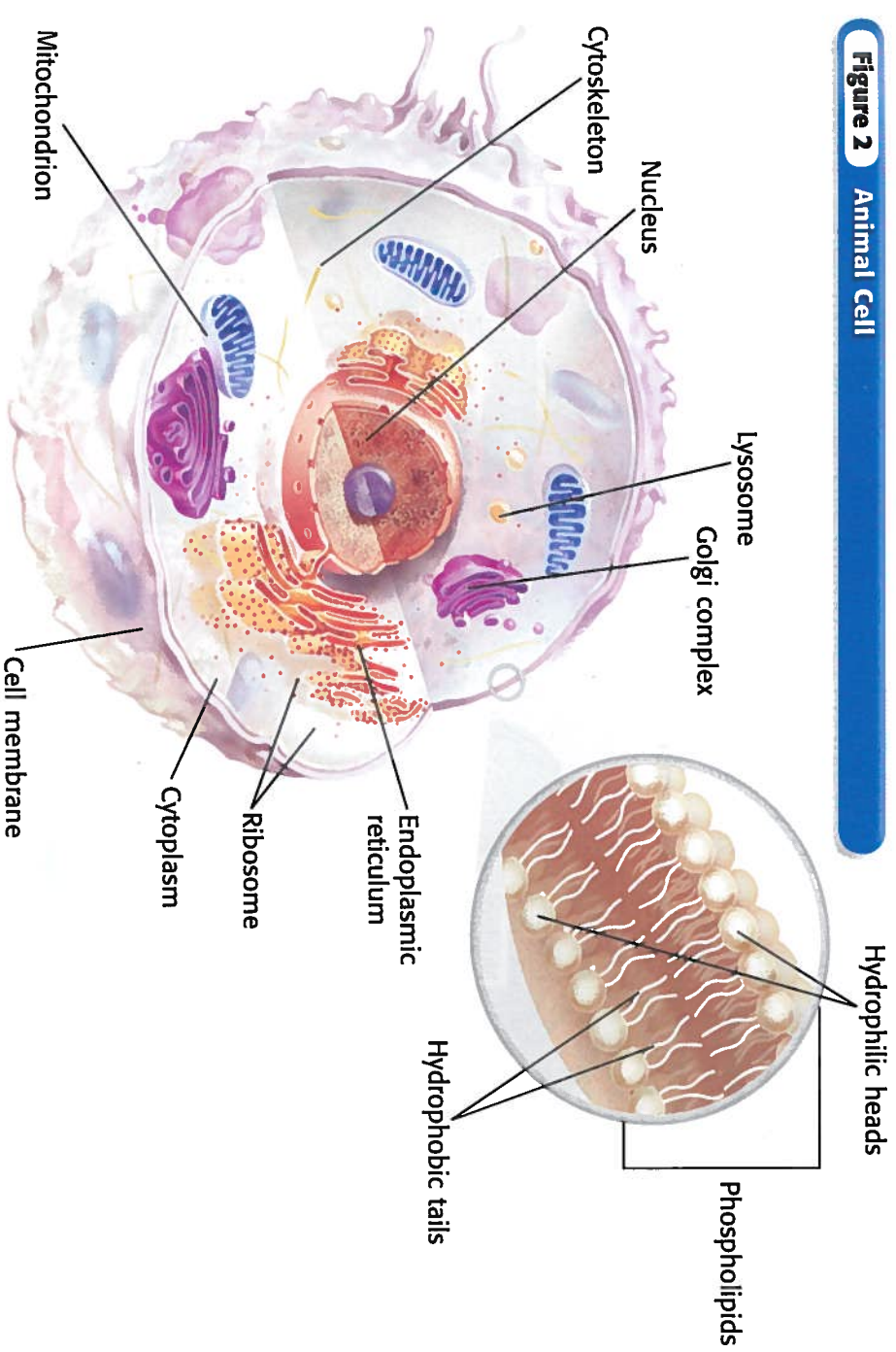
All cells have a cell membrane. The *cell membrane* is a protective barrier that encloses a cell. It separates the cell's contents from the cell's environment. The cell membrane is the outermost structure in cells that lack a cell wall. In cells that have a cell wall, the cell membrane lies just inside the cell wall.

The cell membrane contains proteins, lipids, and phospholipids. *Lipids*, which include fats and cholesterol, are a group of compounds that do not dissolve in water. The cell membrane has two layers of phospholipids (FAHS foh LIP idz), shown in **Figure 2**. A *phospholipid* is a lipid that contains phosphorus. Lipids are “water fearing,” or *hydrophobic*. Lipid ends of phospholipids form the inner part of the membrane. Phosphorus-containing ends of the phospholipids are “water loving,” or *hydrophilic*. These ends form the outer part of the membrane.

Some of the proteins and lipids control the movement of materials into and out of the cell. Some of the proteins form passageways. Nutrients and water move into the cell, and wastes move out of the cell, through these protein passageways.

Reading Check What are two functions of a cell membrane?

Figure 2 Animal Cell



CONNECTION TO Language Arts

WRITING SKILL The Great Barrier

In your science journal, write a science fiction story about tiny travelers inside a person's body. These little explorers need to find a way into or out of a cell to solve a problem. You may need to do research to find out more about how the cell membrane works. Illustrate your story.